

## **REMARKS**

The Applicant is filing this Response and Amendment in response to Office Action dated May 11, 2006. At the time of the Office Action, claims 1-5, 8-23, 26-36, and 58-63 were pending and claims 9-19, 27-36, and 58-63 were withdrawn. In this Response and Amendment, claims 1 and 20 are amended.

In the Final Office Action, claims 1-2, 3-5, 8, 20-21, 23, and 26 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,020,235 to Chang (“the Chang reference”). Claims 3 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable based on the Chang reference in view of U.S. Patent No. 6,055,655 to Momohara (“the Momohara reference”). Each of these rejections is addressed in detail below.

### **The Rejection Under 35 U.S.C. § 102(b)**

With respect to the rejection of claims 1-2, 3-5, 8, 20-21, 23 and 26 under Section 102 based on the Chang reference, the Examiner stated:

Claims 1-2, 3-5, 8, 20-21 and 23, 26 [sic] are rejected under 35 U.S.C. 102(b) as being anticipated by Chang (US 6020235).

Regarding claim 1, Chang discloses a plurality of generally elliptical capacitive memory elements (*The shaded region in Fig. 3 which defines the extra capacitor area is oblong with sharp edges, however, physically implementing such a structure would yield a device with rounded edges. Therefore, the examiner concludes that Chang anticipates capacitive memory elements that are **generally** elliptical*), each capacitive memory element having a first electrode (13, Fig. 1a) with an interior portion forming a pair of concentric sidewalls extending perpendicularly from a substrate (*starting from the bottom of 13, Fig. 1a, the electrode makes a symmetrical step upward in opposing horizontal directions thus producing a pair of concentric sidewalls extending perpendicularly from a substrate*)

the plurality of capacitive memory elements disposed on a substrate so that an axis that runs longitudinally through one of the

plurality of capacitive memory elements is not generally parallel with an edge of the substrate (Fig. 3 and Col. 2, lines: 50-65).

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Regarding claim 20, Chang discloses an integrated circuit device, comprising: a memory array that includes a plurality of memory cells disposed on the substrate, the memory array comprising a plurality of capacitive memory elements, each of the capacitive memory elements being associated with one of the plurality of memory cells, each capacitive memory element having a first electrode (13, Fig. 1a) with an interior portion forming a pair of concentric sidewalls extending perpendicularly from the substrate (*starting from the bottom of 13, Fig. 1a, the electrode makes a symmetrical step upward in opposing horizontal directions thus producing a pair of concentric side walls extending perpendicularly from a substrate*)

the plurality of capacitive memory elements being disposed on the substrate so that an axis that runs longitudinally through one of the plurality of capacitive memory elements is not generally parallel with an edge of the substrate (Fig. 3 and Col. 2, lines: 50-65).

Office Action, pp. 3-5 (emphasis in original).

The Applicant respectfully traverses the rejection. Anticipation under section 102 can be found only if a single reference shows exactly what is claimed. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 U.S.P.Q. 773 (Fed. Cir. 1985). For a prior art reference to anticipate under section 102, every element of the claimed invention must be identically shown in a single reference. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). In order to maintain a proper rejection under section 102, a single reference must teach each and every element or step of the rejected claim, else the reference falls under section 103. *Atlas Powder v. E.I. du Pont*, 750 F.2d 1569 (Fed. Cir. 1984). Accordingly, the Applicant need only point to a single element not found in the cited reference to demonstrate that the cited reference fails to anticipate the claimed subject matter. The prior art reference also must show the *identical* invention “*in as complete detail as contained in the ... claim*” to support a *prima facie* case of anticipation.

*Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989).

***Independent Claim 1 and its Dependent Claims***

In the present case, the Chang reference does not anticipate the Applicant's independent claim 1 under Section 102 because every element of the claimed invention is not identically shown in Chang. Specifically, independent claim 1 recites a "first electrode having a pair of concentric sidewalls that are generally concentric in a plane that is parallel to a surface of a substrate on which the capacitive memory elements are disposed." (Emphasis added.)

In contrast to the Applicant's claim, the Chang reference does not teach sidewalls that are concentric in a plane that is parallel to the substrate. For context, the Chang reference discloses a memory cell having a shell-shaped electrode 13 and 15 that extends parallel to a substrate, like a tube running across the surface. Specifically, the shell-shaped electrode 13 and 15 forms a sleeve around the core 14, and the core 14 extends along the surface of the substrate "from one memory cell to another memory cell." Chang, col. 2, ll. 24-26 and 52-55; Fig. 3. Therefore, the shell-shaped electrode 13 and 15, which surrounds the core 14, also extends along the surface of the substrate. Consequently, even if, *ad arguendo*, the walls of the shell shaped electrode 13 and 15 are concentric, they are concentric in a plane that is perpendicular to the substrate, not a plane that is parallel to the substrate.

Therefore, the Chang reference does not disclose “a pair of concentric sidewalls that are generally concentric in a plane that is parallel to a surface of a substrate,” as recited by independent claim 1. (Emphasis added.)

***Independent Claim 20 and its Dependent Claims***

For similar reasons, the Chang reference does not anticipate the Applicant’s independent claim 20, which recites “a first electrode that is circumscribed by a sidewall, wherein generally all of the sidewall is substantially perpendicular to the face of the substrate.” (Emphasis added.)

In sharp contrast, as discussed above, the Chang reference teaches a shell-shaped electrode 13 and 15 that extends like a tube over the surface of the substrate. The shell-shaped electrode 13 and 15 has an outer surface, which is adjacent the film 21a, and an inner surface, which is adjacent the film 21b. While a small portion of each of these surfaces may be perpendicular to the substrate, neither the entirety of the inner surface nor the entirety of the outer surface is perpendicular to the substrate. Moreover, the small portion of these surfaces that may be perpendicular to the substrate do not circumscribe the electrode 13 and 15 and, thus, could not be the sidewall recited by claim 20. Accordingly, the Chang reference does not teach “a first electrode that is circumscribed by a sidewall, wherein generally all of the sidewall is substantially perpendicular to the face of the substrate.”

For at least these reasons, the Applicant respectfully submits that independent claims 1 and 20 (and the claims depending thereon) are not anticipated by the Chang reference.

Accordingly, the Applicant respectfully requests the withdrawal of the rejection of claims 1-2, 3-5, 8, 20-21, 23 and 26 under Section 102 based on the Chang reference.

### **The Rejection Under 35 U.S.C. § 103**

With respect to the rejection of claims 3 and 22 under 35 U.S.C. § 103 as being rendered unpatentable by the Chang reference in view of the Momohara reference, the

Examiner stated:

Claims 3 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang (US 6020235) in view of Momohara (US 6055655).

Regarding claims 3 and 22, Chang discloses the structure of claims 1 and 20 as mentioned above, however, Chang does not explicitly disclose wherein the substrate comprises a processor.

Momohara discloses a system-on-silicon i.e. processor and memory on the same substrate (Figs. 1 a-b and Col. 1 ).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Chang's memory structure into Momohara's system on a chip for the purpose of reducing the size and cost as taught by Momohara (Col. 1).

Office Action, p. 6.

The Applicant respectfully traverses the rejection. The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979). Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). Accordingly, to establish a *prima facie* case, the Examiner must not only show that the combination includes *all* of the claimed elements, but also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed

invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985). When prior art references require a selected combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gained from the invention itself, i.e., something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination. *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988).

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988).

The rejection of claims 3 and 22 under Section 103 is defective for at least the reasons set forth above with respect to the rejection of independent claims 1 and 20 under Section 102. Indeed, neither the Chang reference nor the Momohara reference discloses a capacitive memory element having “concentric sidewalls that are generally concentric in a plane that is parallel to a surface of a substrate,” as recited by claim 1, or “a first electrode that is circumscribed by a sidewall, wherein generally all of the sidewall is substantially perpendicular to the face of the substrate,” as recited by claim 21. (Emphasis added.) Therefore, the combination of the Chang reference and the Momohara reference cannot render the Applicant’s claims obvious.

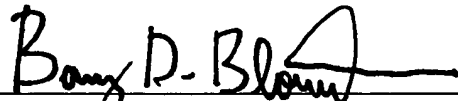
Accordingly, the Applicant respectfully asserts that the rejections of claims 3 and 20 under Section 103 are erroneous and should be withdrawn.

### **Conclusion**

In view of the remarks set forth above, the Applicant respectfully requests reconsideration of the Examiner's rejections and allowance of all pending claims 1-5, 8-23, 26-36 and 58-63. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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